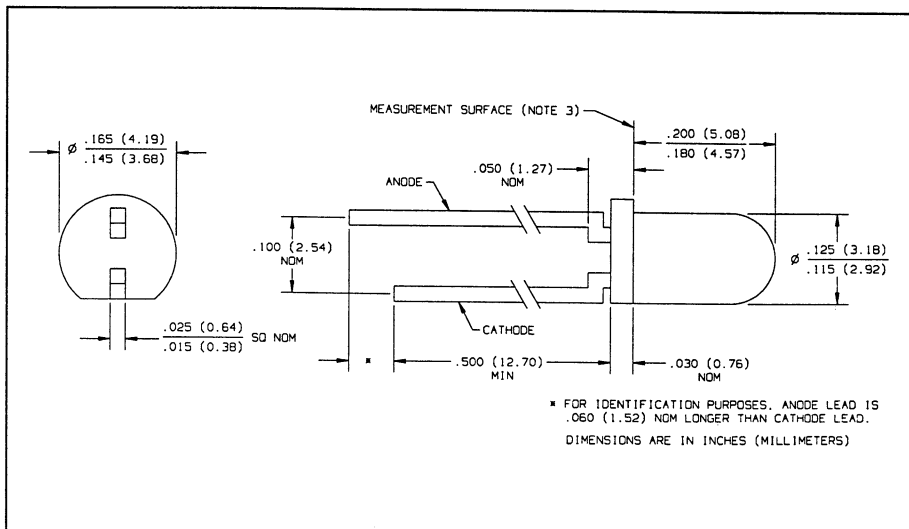
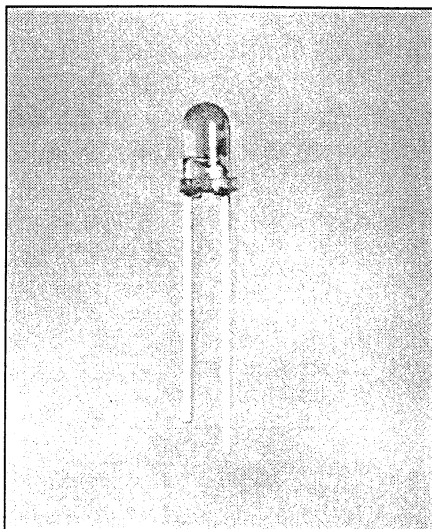


# GaAlAs Plastic Infrared Emitting Diodes

## Types OP266A, OP266B, OP266C, OP266D



### Features

- Narrow irradiance pattern
- Mechanically and spectrally matched to the OP506 series devices
- Significantly higher power output than GaAs at equivalent drive currents
- Wavelength matched to silicon's peak response
- T-1 package style

### Description

The OP266 device is an 890nm high intensity gallium aluminum arsenide infrared emitting diode molded in an IR transmissive amber tinted epoxy package. The narrow irradiance pattern provides high on-axis intensity for excellent coupling efficiency. Lead spacing on this device is .100 inch (2.54mm).

### Replaces

OP261

### Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

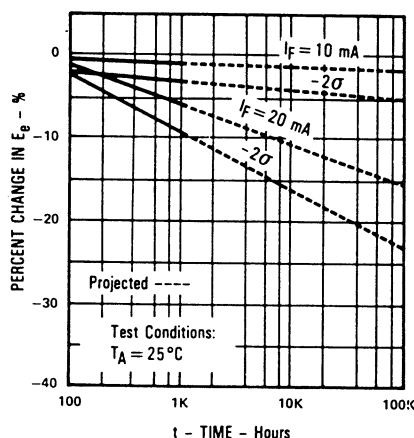
Reverse Voltage	2.0 V
Continuous Forward Current	50 mA
Peak Forward Current (1 $\mu\text{s}$ pulse width, 300 pps)	3.0 A
Storage and Operating Temperature Range	$-40^\circ\text{C}$ to $+100^\circ\text{C}$
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]	$260^\circ\text{C}^{(1)}$
Power Dissipation	100 mW <sup>(2)</sup>

#### Notes:

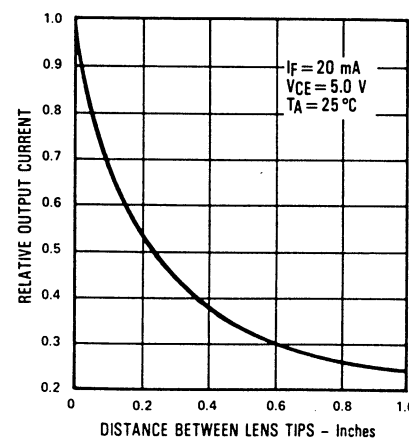
- (1) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering. A max. of 20 grams force may be applied to the leads when soldering.
- (2) Derate linearly 1.33 mW/ $^\circ\text{C}$  above  $25^\circ\text{C}$ .
- (3)  $E_{e(\text{APT})}$  is a measurement of the average apertured radiant incidence upon a sensing area .081" (2.06 mm) in diameter, perpendicular to and centered on the mechanical axis of the lens, and 0.590" (14.99 mm) from the measurement surface.  $E_{e(\text{APT})}$  is not necessarily uniform within the measured area.

### Typical Performance Curves

#### Percent Changes in Radiant Intensity vs Time



#### Coupling Characteristics of OP266 and OP506



# Types OP266A, OP266B, OP266C, OP266D

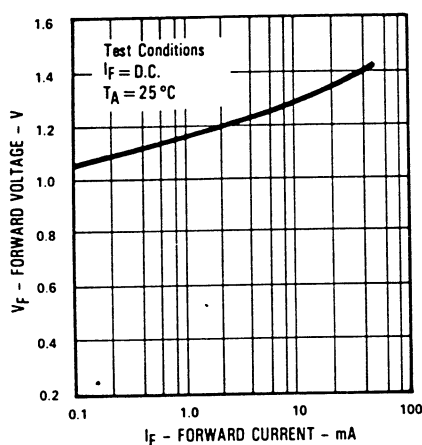
Electrical Characteristics ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
$E_e(\text{APT})$	Apertured Radiant Incidence	OP266D 0.54 OP266C 0.54 OP266B 1.65 OP266A 2.70		3.30 4.70	$\text{mW}/\text{cm}^2$ $\text{mW}/\text{cm}^2$ $\text{mW}/\text{cm}^2$ $\text{mW}/\text{cm}^2$	$I_F = 20\text{ mA}^{(3)}$ $I_F = 20\text{ mA}^{(3)}$ $I_F = 20\text{ mA}^{(3)}$ $I_F = 20\text{ mA}^{(3)}$
$V_F$	Forward Voltage			1.80	V	$I_F = 20\text{ mA}$
$I_R$	Reverse Current			100	$\mu\text{A}$	$V_R = 2\text{ V}$
$\lambda_p$	Wavelength at Peak Emission		890		nm	$I_F = 10\text{ mA}$
B	Spectral Bandwidth Between Half Power Points		80		nm	$I_F = 10\text{ mA}$
$\Delta\lambda_p/\Delta T$	Spectral Shift with Temperature		+0.18		$\text{nm}/^\circ\text{C}$	$I_F = \text{Constant}$
$\theta_{\text{HP}}$	Emission Angle at Half Power Points		18		Deg.	$I_F = 20\text{ mA}$
$t_r$	Output Rise Time		500		ns	$I_{F(\text{PK})} = 100\text{ mA}$ , $\text{PW} = 10\text{ }\mu\text{s}$ , D.C. = 10%
$t_f$	Output Fall Time		250		ns	

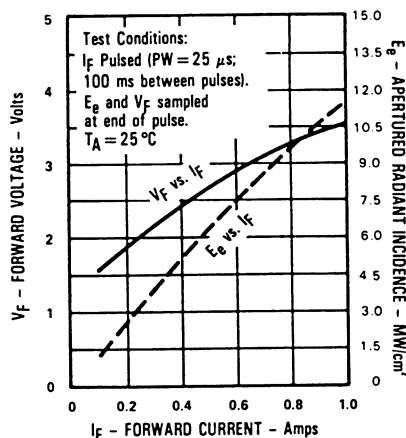
INFRARED  
EMITTING  
DIODES

## Typical Performance Curves

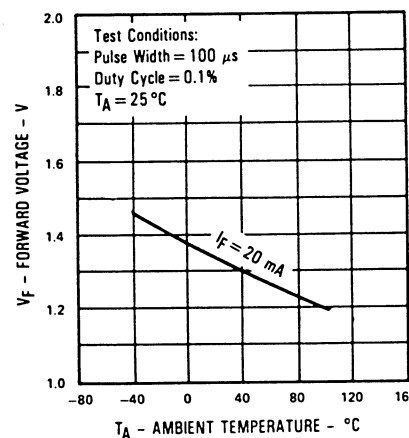
Forward Voltage vs  
Forward Current



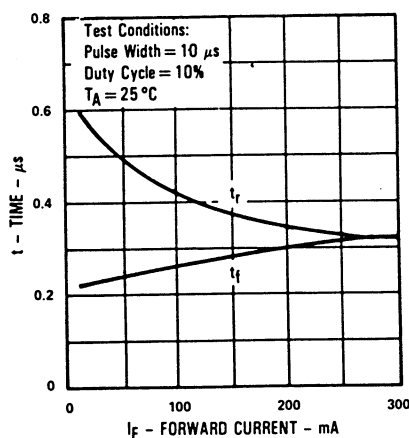
Forward Voltage and Radiant Incidence  
vs Forward Current



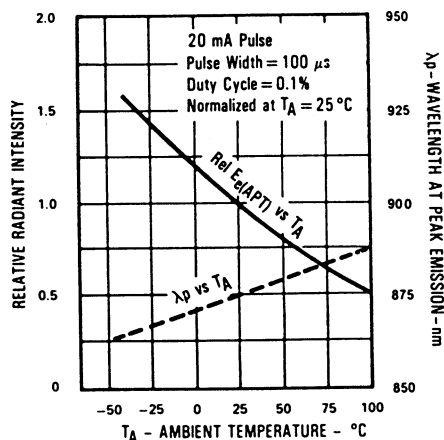
Forward Voltage vs  
Ambient Temperature



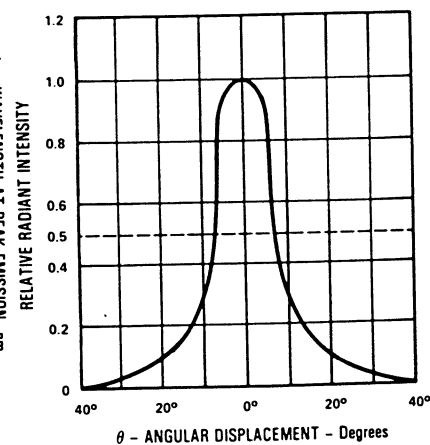
Rise Time and Fall Time vs  
Forward Current



Relative Radiant Intensity and Wavelength  
at Peak Emission vs Ambient Temperature



Relative Radiant Intensity vs  
Angular Displacement



Optek reserves the right to make changes at any time in order to improve design and to supply the best product possible.

Optek Technology, Inc.

1215 W. Crosby Road

Carrollton, Texas 75006

(972)323-2200

Fax (972)323-2396